Epidemiology of Cerebrovascular Disease

Cerebrovascular disease (CVD) and ischemic heart disease are the major causes of death and disability in many countries. CVD is also an important cause of vascular dementia; it is noteworthy that the frequency of vascular dementia in Japan is more than that in western countries (1). Although the incidence rate of CVD has significantly decreased in Japan (2, 3), the prevalence rate of CVD has not decreased (4–6). This is because the case-fatality rate of CVD has also decreased (3).

See also p 736.

In this issue of Internal Medicine, Kimura et al (7) undertook a demographic study of first-ever stroke and initial acute myocardial infarction (AMI) in Okinawa, and clarified the incidence rate of CVD in a large-scale population study. The age-adjusted annual incidence rate for CVD was 105 per 100,000 standard population of Japan, and that of AMI was 26. Their results together with previous reports (2, 3) suggest that the incidence rate of CVD has significantly decreased in Japan. Various studies (8, 9) in Japan have reported that the frequency of CVD is higher than that of AMI, and the low incidence rate of AMI seems to be a common finding. The case-fatality rate of CVD within 28 days of onset was 12.8%, and that of AMI was 22.2%. The case-fatality rate of CVD has also decreased in Japan. Of the CVD cases, 51.4% were diagnosed as brain infarction, 38.7% as brain hemorrhage, and 9.3% as subarachnoid hemorrhage. A high proportion of brain infarction has been found in other studies in Japan (6). Moreover, the frequencies of lacunar infarction and multiple infarction have increased, and the severity of CVD is decreasing (10). On the other hand, the proportional frequency of brain hemorrhage in Okinawa is higher than that noted in previous reports (11, 12). As the high frequency of brain hemorrhage appears to be one of the unique characteristics of CVD in Okinawa, analysis of the cause is necessary in the future. Moreover, we hope that not only a cross-sectional study but also a longitudinal study will be conducted.

Identification of the risk factors for CVD may yield important clues concerning the pathogenesis and thereby lead to CVD prevention. Classic vascular risk factors, such as arterial hypertension, diabetes mellitus, and cigarette smoking, are closely associated with the incidence of CVD. CVD is a complex condition influenced not only by conventional vascular risk factors but also by genetic risk factors as well. Evidence is accumulating that genetic factors also play a significant role in the etiology of CVD (13). It has been reported that apolipoprotein E and β-fibrinogen gene polymorphisms are associated with CVD (14, 15). However, some of the results of gene polymorphism are as yet controversial. It might be one of the reasons that hospital-based studies are likely to be selectively biased. Therefore, we examined the association between apolipoprotein E and CVD in a community-based study and found a positive association (1, 16). In the future, analysis of gene polymorphism in community-based studies will be necessary.

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References
